



Exam Coverage الهيكل الامتحاني

It is prohibited to photocopy or circulate this document. Legal actions will be taken against those who violate this rule.
يحظر تصوير أو تداول هذه الوثيقة، وسيتم اتخاذ الإجراءات القانونية اللازمة ضد من يخالف ذلك.

Academic Year	2025/2026
السنة الدراسية	
Term	1
الفصل	
Subject	Physics/فيزياء
المادة	الفيزياء/الاسميان
Grade	12
الصف	
Stream	General
النوع	العام
Number of MCQ عدد الأسئلة المتعددة الاختيار	20
Marks of MCQ مجموع النقاط للأسئلة المتعددة الاختيار	3
Number of FRQ عدد الأسئلة المفتوحة	4
Marks per FRQ النقاط لكل أسئلة مفتوحة	8
Type of All Questions نوع الأسئلة	الأسئلة المتعددة الاختيار MCQ الأسئلة المفتوحة FRQ
Maximum Overall Grade الدرجة القصوى	100
Exam Duration مدة الاختبار	150 minutes
Mode of Implementation طريقة التطبيق	Self-Assess & Paper-Based
Calculator الحاسبة	Allowed مسموحة

Question*	Learning Outcome/Performance Criteria** النتائج التعلم/معايير الأداء	Reference(s) in the Student Book (English Version) المراجع في كتاب الطالب (النسخة الانجليزية)	
		Example/Exercise مثال/تمرين	Page الصفحة
الأسئلة المتعددة الاختيار - MCQ	1. State the magnitude of the elementary charge in coulombs (C) and that the charges are quantized.	Student Book Textbook	P.13 Textbook
	2. Conduct an experiment to demonstrate charging of objects and the electrostatic force between charged objects..	Student Book Example Problem 5, PHYSICS Challenge	P.12; P.(17 - 18) P.30; P.34
	3. Describe how charge is separated on a neutral object due to another charged object.	Student Book Q.(1, 3 - 5)	P.6 P.7
	4. Investigate the electrostatic force between charged objects, and state / demonstrate that unlike charges attract and like charges repel.	Student Book Figure 5	P.8 P.8
	5. Understand the mechanism of grounding and how it is used in the process of charging objects.	Student Book Figure 10	P.11 P.11
	6. Explain the process of charging by Rubbing; Conduction; Induction.	Student Book Figure 3; Figure 7; Figure 9	P.(5 - 6, 9 - 10) P.5; P.9; P.10
	7. Distinguish between electrical conductors and insulators giving typical examples.	student Book Q.(2 - 4)	P.(6 - 7) P.7
	8. Use vector addition to calculate the net force on a charge due to other point charges.	Student Book EXAMPLE (Problem 1); Q.(9 - 14)	P.(13 - 14) P.14; P.15
	9. State and apply Coulomb's law to charges separated by finite distances.	Student Book Physics Challenge	P.(12 - 13) P.15
	10. Demonstrate an understanding that the work performed in moving a charged particle in an electric field can result in the particle gaining electric potential energy or kinetic energy or both.	Student Book Q.(48 - 52)	P.(27 - 28) P.28
	11. 1. Identify the direction of an electric field as the direction of the force on a positive test charge placed in the field. 2. Use vector addition to calculate the net force on a charge due to other point charges.	Student Book Example Problem 1; Q.(11 - 14); Q.(24 - 37)	P.14; P.(17 - 20) P.14; P.15; P.(19 - 20)
	12. Describe the electrostatic potential energy lost or gained in moving a charge between two points in a known electric field.	Student Book Figure 24	P.(25 - 26) P.26
	13. Derive the electric field strength due to a point charge using Coulomb's law and the definition of electric field strength, to calculate the electric field strength at a point close to a single point charge.	Student Book Q.(30 - 37), Example Problem 3	P.18 P.20
	14. Sketch the uniform electric field lines between two parallel plates and explain how the electric potential varies between the plates.	Student Book Figure 25; EXAMPLE problem 4	P.(27 - 28) P.27; P.28
	15. 1. Describe how a lightning rod works. 2. State some of the applications of electrostatic forces	Student Book Get It?	P.31 P.31
	16. Sketch the electric field lines to model the electric field around single point charges (positive or negative) and for a pair of electric charges.	Student Book Figure 19 & 20; Q.(38 - 42)	P.(21 - 22) P.(21 - 22); P.23
	17. Define Electric potential difference as the ratio of the work needed to move a charge to the magnitude of that charge, to understand the relationship between work, electric potential and charge.	Student Book Q.(48, 50 - 52)	P.(24 - 25) P.28
	18. Describe Millikan's oil-drop experiment and explain how it confirms that charge exists in discrete amounts, which are integral multiples of the elementary charge.	Student Book Get It?; Q.(53 - 56)	P.(29 - 30) P.29; P.30
	19. 1. Explain how electric charges are distributed on a spherical conductor, and the effect of this on both the electric field and the electric potential. 2. Explain the meaning of equipotential.	Student Book Figure 28	P.31 P.31
	20. 1. Define capacitance as the ratio of the net charge on one plate of a capacitor to the potential difference across the plates, and it is measured in Farads. 2. Apply the equation for capacitance to solve numerical problems.	Student Book Figure 30; Q.(57 - 62, 68)	P.(32 - 34) P.32; P.33
قد تظهر الأسئلة بترتيب مختلف في الامتحان النهائي.			
* Questions might appear in a different order in the actual exam.			
كما يرون في كتاب الطالب LMS والنسخة القلمية.			
** As it appears in the textbook, LMS, and (Main_IP).			
الوحدات الفيزيائية مميزة لأي كمية فيزيائية، وعلامة فارقة لها، أذا يجب الاهتمام بوحدة الطالب بإعطاء الوحدة الفيزيائية المناسبة لكل كمية.			
*** Physical units are distinctive for any physical quantity, and a distinguishing mark for it. Therefore, care must be taken to guide students by giving the appropriate physical unit for each quantity.			
التركيز على عمليات العلم (مهارات التفكير العلمي) وكتابة الأساسيات منها.			
**** Focusing on science processes (scientific thinking skills), especially basic ones.			
الأسئلة المفتوحة - FRQ	Q1. Part A: 1. Describe how an object becomes charged by the gain or loss of electrons and describe charging by friction. 2. Identify the two type of charges, positive and negative, and that the net charge of an isolated system is always conserved. Part B: Define electrostatics as the study of electric charges that can be collected and held in one place.	Student Book Figure 3; Q.(1 - 4) Q. (3 - 5)	P.(5 - 6) P.(3 - 5) P.5; P.7 P.7
	Q2. 1. Solve problems involving the electrostatic force acting on charged particles by making use of Coulomb's Law. 2. Use vector addition to calculate the net force on a charge due to other point charges.	Student Book EXAMPLE Problem 1; Q.(9 - 14); Q.(15 - 23)	P.(12 - 14) P.14; P.15; P.16
	Q3. Part A: Develop a tool, sketches, descriptive text or presentation to show the morphology of electric field lines of a single or multiple charge system with positive and/or negative charges. Part B: Study of the Van de Graaff apparatus, a device that works on static electricity, including its components and working mechanism.	Student Book Figure 15, Figure 20; Q.(38-40) Figure 21, Q.42; Q.70	P.(21 - 22) P.23 P.(21 - 22); P.23 P.23; P.34
	Q4. Part A: 1. Describe the charge distribution on a solid conducting sphere, a hollow conducting sphere and an irregular conducting surface. 2. Calculate the electric field strength at a point close to a single point charge / a conducting charged sphere. Part B: Show, by analogy with the gravitational field, that an electric charge placed in an electric field possesses potential energy which depends on the position of the charge within the field, and is called electrostatic potential energy and describe the electrostatic potential energy lost or gained in moving a charge between two points in a known electric field.	Student Book Q.(30 - 37) Q.(43 - 47); Q.49	P.18 P.(24 - 26) P.20 P.27; P.28
	Q5. Clarify the meaning of the important terms and concepts contained in the ELECTROSTATICS Module.	Student Book Terms and Concepts in Textbook	P.(3 - 34) P.(3 - 34)